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A New Species of the Pseudoscorpion Genus *Serianus* (Arachnida, Chelonethida, (Olpiidae) from North Carolina^{1, 2}

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ABSTRACT

The new species, *Serianus carolinensis*, is the first representative of the genus to be recorded from the eastern United States.

Recently, Weygoldt (1966) has reported upon the unique mating behavior of some pseudoscorpions of the genus *Serianus*, which he found in the sand dunes near Beaufort, North Carolina. These animals prove to belong to a new species of *Serianus*, which is described below. I am indebted to Dr. Weygoldt for the specimens upon which this study is based. Types are deposited in the collection of the American Museum of Natural History.

Serianus carolinensis, NEW SPECIES

Material.—Holotype male (WM917.01010) and numerous paratypes, including adults of both sexes and three small nymphs, taken from under stones and wood in dunes near Beaufort, Carteret County, North Carolina, by Peter Weygoldt during March-July, 1966. Thirteen males and eight females were mounted for study.

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Description.—*Male.* (Data are given first for the holotype, followed often in parentheses by ranges based on twelve paratypes). Generally similar to *Serianus gratus* Hoff, 1964, but slightly smaller. Carapace, palps, and tergites rich golden brown in color; chelicerae and legs light yellowish brown. Carapace longer than broad; anterior four-fifths strongly sclerotized and with a V-shaped posterior border; surface smooth. With four corneate eyes, the anterior ones slightly larger than the posterior; anterior eyes close to the carapacial margin and separated from the posterior eyes by less than one ocular diameter. Carapacial chaetotaxy 4-4-2-4-4-2 = 20 (some paratypes with one or two fewer setae on the middle part of the carapace). Coxal area typical of the genus.

Abdomen long ovate; many of the tergites and sternites divided; surfaces smooth; pleural membranes with wavy, longitudinal striations. Tergal chaetotaxy 4:4:4:4:4:6:6:6:6:10:6:6 mm. Most sternites with six marginal setae; in addition sternite 6 has a medial group of four (three to five) smaller setae, sternite 7 a medial group of four (three to five) setae, and sternite 8 a medial group of two (two); occasionally sternite 9 has one or two smaller medial setae. Anterior stigmatic plates with one to three small setae, and posterior plate with one seta. Genital opercula with two groups of four (two to five) setae along the anterior lip and two groups of two (two) small setae along the posterior lip of the opening.

Chelicera typical of the genus, 0.34–0.38 the length of the carapace, and 1.7–1.9 times as long as broad. Palm with five setae; flagellum of four setae, of which the distal one is terminally denticulate; serrula exterior with 16 (15 or 16) plates. Galea with a long lateral branch at about the midpoint and with the main stalk terminally bifid (Fig. 1). Subapical lobe of movable finger large, simple; a long thin, spine-like blade just proximal to the subapical lobe on the medial side of the finger. Fixed finger with three small and three medium sized teeth.

Palps without unusual features. Proportions of segments as shown in Fig. 2; trochanter 2.0 (1.9–2.1), femur 3.0 (2.9–3.1), tibia 2.3 (2.3–2.5) and chela without pedicel 3.3 (3.2–3.5)

times as long as broad; hand without pedicel 1.8 (1.6–1.85) times as long as deep; movable finger 0.97 (0.92–1.0) times as long as hand. Tactile setae of chela generally as shown in Fig. 3; but one paratype with seta *sb* missing from movable finger and setae *ist* and *est* missing from fixed finger, and one paratype with seta *st* missing from movable finger. Seta *t* usually at or a little distal to the midpoint of the movable finger. Dorsum of femur with a long, delicate, tactile seta 0.345–0.395 the length of the segment from the proximal end. Fixed finger of chela with 20 (18–21) low, triangular teeth, the cusps displaced toward the proximal side, and one or two, tiny, isolated denticles at the proximal end of the row; movable finger with 19 (17–20) similar teeth and occasionally a tiny, proximal denticle.

Legs of typical facies. Arolia bifid and about twice as long as claws. Leg I with telofemur about 1.6 times as long as basifemur. Leg IV with entire femur 2.8 (2.5–2.8) times as long as deep; tactile seta on tibia 0.34 (0.31–0.36) and on metatarsus 0.24 (0.16–0.30) the length of the segment from the proximal end.

Females.—(Data are often given as ranges for the eight paratypes.) Similar to male but slightly larger. Carapacial chaetotaxy 4-4-2-4-4-2- = 20 (three specimens with one fewer seta on the middle part of the carapace). Chaetotaxy of abdominal tergites as in male. Most sternites with six marginal setae, and in addition sternite 6 has a medial row of three smaller setae, sternite 7 a medial row of three (two or three) setae, and sternite 8 a medial pair of setae. Anterior genital operculum with two groups of four setae.

Chelicera similar to that of male in all respects, including the galea.

Palps as in the male. Trochanter 1.9–2.2, femur 2.8–3.1, tibia 2.1–2.4, chela without pedicel 3.1–3.3 times as long as broad; hand without pedicel 1.65–1.8 times as long as deep; movable finger 0.91–0.95 times as long as hand. In one paratype tactile setae *st* and *sb* lie side by side, at exactly the same level, on the movable chelal finger. Tactile seta on femur 0.35–

0.42 the length of the segment from the proximal end. Fixed finger of chela with 18–22 marginal teeth and often one or two tiny proximal denticles; movable finger with 17–21 teeth.

Legs as in the male.

Nymphs.—The three small nymphs in the collection provide insufficient data for descriptions.

Measurements (mm).—*Male*.—Body length 2.1 (1.6–2.0). Entire carapace 0.50 (0.465–0.51) long and 0.37 (0.35–0.39) broad; strongly sclerotized part 0.43 (0.42–0.45) long; diameter of eyes about 0.035. Chelicera 0.185 (0.165–0.185) by 0.10 (0.09–0.105); movable finger 0.115 (0.10–0.125) long. Palpal trochanter 0.215 (0.20–0.23) by 0.105 (0.095–0.12); femur 0.36 (0.34–0.385) by 0.12 (0.11–0.13); tibia 0.35 (0.32–0.38) by 0.15 (0.14–0.16); chela without pedicel 0.59 (0.56–0.62) by 0.18 (0.165–0.19); hand without pedicel 0.31 (0.30–0.32) by 0.17 (0.165–0.195) deep; movable finger 0.30 (0.28–0.31) long. Leg I: basifemur 0.08 (0.085–0.10) by 0.075 (0.075–0.085); telofemur 0.14 (0.135–0.155) by 0.085 (0.08–0.095); tibia 0.155 (0.155–0.18) by 0.06 (0.055–0.06); metatarsus 0.055 (0.055–0.07) by 0.05 (0.04–0.045); telotarsus 0.075 (0.08–0.085) by 0.04 (0.035–0.045). Leg IV: entire femur 0.345 (0.34–0.38) long; basifemur 0.125 (0.12–0.135) by 0.09 (0.08–0.10); telofemur 0.285 (0.28–0.315) by 0.125 (0.13–0.155); tibia 0.235 (0.23–0.265) by 0.075 (0.075–0.085); metatarsus 0.075 (0.075–0.09) by 0.05 (0.05–0.055); telotarsus 0.11 (0.10–0.12) by 0.045 (0.045–0.05).

Females.—Body length 2.0–2.8. Entire carapace 0.51–0.56 long by 0.37–0.43 broad; heavily sclerotized part 0.44–0.49 long; diameter of eyes about 0.035. Chelicera 0.18–0.21 by 0.10–0.12; movable finger 0.105–0.13 long. Palpal trochanter 0.23–0.24 by 0.105–0.125; femur 0.35–0.41 by 0.125–0.135; tibia 0.34–0.395 by 0.155–0.165; chela without pedicel 0.60–0.645 by 0.185–0.205; hand without pedicel 0.315–0.34 by 0.185–0.20 deep; movable finger 0.29–0.315 long. Leg I: basifemur 0.095–0.10 by 0.08–0.095; telofemur 0.15–0.16 by 0.09–0.105. Leg IV: entire femur 0.365–0.395 by 0.145–0.155; tibia 0.255–0.28 by 0.08–0.09.

Remarks.—*Serianus carolinensis* is similar in many respects to *S. gratus* Hoff from Jamaica, but differs from the latter in the following respects: slightly smaller size; slightly more slender palpal femur and tibia; more slender legs; lateral branch of the galea arising near the midpoint and nearly as long as the main branch; serrula exterior with 15 or 16 plates rather than 17 or 18; tactile seta *t* of the movable chelal finger usually at or distal to, rather than proximal to, the midpoint of the segment; sixth and seventh abdominal sternites usually with three or four setae, instead of five, in the medial groups; and occasionally with one or two medial setae on the ninth sternite.

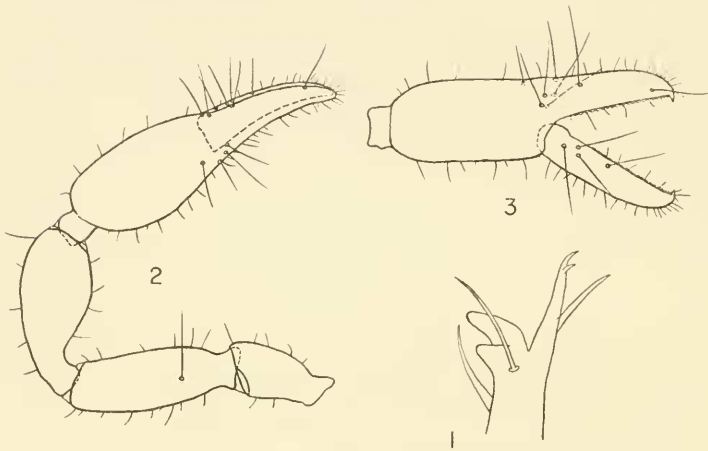
One paratype male is abnormal in having pedal coxae I and II on the right side fused and reduced in size. Leg I is normal while leg II is very small and poorly formed, apparently consisting only of the withered remnants of trochanter, femur, and tibia. This is obviously the result of some developmental malfunction.

The variations in number of tactile setae on the chelae of two paratype males appears similar to the situation reported by Hoff (1950) for *S. minutus* from Argentina. It does not appear to be strictly a neotenic condition, since in one case *st* is lacking while in the other case *sb* is lacking. Unfortunately, not enough nymphs are available to determine the pattern of addition of tactile setae during development. This situation may simply reflect a general tendency for variation in the chaetotaxy in the species as seen also on the carapace and on the stigmatic plates.

The specimens of *Serianus carolinensis* mentioned here are the first reported representatives of the genus from the eastern United States. The nearest known relatives are *S. dolosus* Hoff from New Mexico and *S. gratus* Hoff from Jamaica. Several nymphs referable to *Serianus*, but not determinable to species, are at hand from Dauphin Island, Mobile County, Alabama. They were taken by Berlese extraction from the debris lodged in a crotch of a pine tree by Walter R. Suter. Their presence in Alabama suggests that representatives of the genus *Serianus* may be expected in suitable habitats all along the Atlantic and Gulf coasts of North America.

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FIGS. 1-3. *Serianus carolinensis*, new species, holotype male. FIG. 1. Tip of movable, cheliceral finger, lateral aspect. FIG. 2. Left palp, dorsal aspect. FIG. 3. Right chela, lateral aspect.

First Additions to "Butterflies of the Delaware Valley"¹

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The page citations in the following additions refer to Shapiro (1966). The format follows that of the original publication.

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